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10/555,227	11/01/2005	Karla S. Colle	2003UR028	4245
7590		03/24/2009	EXAMINER	
Gerald D Malpass Jr			KUGEL, TIMOTHY J	
ExxonMobil Upstream Research Company			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/555,227	<b>Applicant(s)</b> COLLE ET AL.
	<b>Examiner</b> Timothy J. Kugel	<b>Art Unit</b> 1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 12 February 2009.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 21-23 and 26-57 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 21-23 and 26-57 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 01 November 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

1. Claims 21-23 and 26-57 are pending as amended on 12 February 2009, claims 1-20, 24 and 25 being cancelled.
  
2. It is noted that applicant has referenced US Patent 3,463,730 (Booth hereinafter); however, such has not been made of record. As a courtesy to applicant and in the interest of compact prosecution, Booth has been included on the PTO-392 Notice of References Cited form included with this Office action.
  
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Response to Amendment and Argument***

4. Applicant's amendment to dependent claims 38 and 56, and applicant's argument regarding the specification defining 'bimodal' as including two or more modes, has been fully considered and overcomes the following:

The objection to claims 38, 39, 44 and 55-57 under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim has been withdrawn.

5. Applicant's assertion of unexpected results over US Patent 6,222,083 (Colle '083), in that a low molecular weight polymer was contemplated by Colle '083 and that

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applicant unexpectedly discovered superior performance in a bimodal molecular weight polymer, has been fully considered and is persuasive.

The rejection of claims 21-23 and 26-39 under 35 USC § 103(a) as being unpatentable over Colle '083 in view of US Patent 4,072,607 (Schiller hereinafter) has been withdrawn.

The rejection of claims 40-57 under 35 USC § 103(a) as being unpatentable over Colle '083 in view of Schiller in further view of US Patent 6,028,233 (Colle '233 hereinafter) has been withdrawn.

6. Applicant's further arguments have been fully considered but are not persuasive.

Applicant argues that Schiller, through the incorporation by reference of Booth, teaches the use of NH<sub>2</sub>-containing polymers and that US Patent 5,600,044 (Colle '044 hereinafter) shows that such are ineffective hydrate inhibitors; however, first, Schiller teaches such NH<sub>2</sub>-containing polymers directly in its teaching of acrylamide and second, contrary to applicant's assertion, Colle '044 teaches that such are "very effective inhibitors of hydrate nucleation growth and/or agglomeration" (Column 5 Lines 13 and 14) and are "also effective inhibitors of hydrate nucleation growth and/or agglomeration" (Column 5 Lines 64-66).

Applicant further argues that the unexpected results shown by the instant application over Colle '083 overcomes the standing rejection over Schiller in view of US Patent 6,028,233 (Colle '233 hereinafter); however, since Schiller—the primary reference in the rejection—teaches polymers having multimodal molecular weights,

such a finding would not have been unexpected to one of ordinary skill in the art at the time the invention was made.

In response to applicant's argument that Schiller is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F2d 1443, 24 USPQ2d 1443 (Fed Cir 1992). In this case, Schiller reasonably pertinent to the particular problem with which the applicant was concerned in that it is directed to the reduction and/or prevention of contamination in conduits.

***Claim Rejections - 35 USC § 102 and/or 35 USC § 103***

7. Claims 21-23 stand rejected under 35 USC 102(b) as being anticipated by, or in the alternative under 35 USC 103(a) as being unpatentable over US Patent 4,072,607 (Schiller hereinafter).

Schiller teaches a treating a petroleum oil field fluid to inhibit scale or precipitate (Column 1 Lines 7-13 and Column 2 Lines 3-6) with an aqueous composition prepared from an acrylamide containing polymer having a bi- or poly-modal molecular weight distribution wherein at least 60% of the polymer has a molecular weight of about 500 to about 2000 and at least about 10% of the polymer has a molecular weight of about 4000 to about 12000 (Column 2 Lines 25-63, Figure 1 and Figure 2) and wherein the molecular weight distribution curve shows either at least two peaks with minimums

between (Figure 1) or a single minimum point between about 4000 and about 7500 with two peaks on either side of the minimum point (Figure 2).

Since Schiller teaches the same composition as claimed, the ability to inhibit clathrate hydrates of the Schiller composition would inherently be the same as claimed. If there is any difference between the product of Schiller and the product of the instant claims the difference would have been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01(I) , *In re Best*, 562 F2d at 1255, 195 USPQ at 433, *Titanium Metals Corp v Banner*, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), *In re Ludtke*, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and *Northam Warren Corp v D F Newfield Co*, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 USC 102 and 103. "There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III) and *In re Best*, 562 F2d at 1255, 195 USPQ at 433.

8. Claims 26-39 stand rejected under 35 USC § 103(a) as being unpatentable over Schiller as applied to claims 21-23 above in view of Colle '083 hereinafter).

Schiller teaches a treating a petroleum oil field fluid to inhibit scale or precipitate with an aqueous composition prepared from an acrylamide containing polymer having a bi- or poly-modal molecular weight distribution wherein at least 60% of the polymer has a molecular weight of about 500 to about 2000 and at least about 10% of the polymer has a molecular weight of about 4000 to about 12000 and wherein the molecular weight distribution curve shows either at least two peaks with minimums between or a single minimum point between about 4000 and about 7500 with two peaks on either side of the minimum point as detailed above.

Schiller does not disclose expressly the use of polymers comprising amides or esters of acyldehydroalanine, N-vinyl amide, N-allyl amide, maleimide, vinyl oxazoline, N-isopropyl methacrylamide or N-vinyl caprolactam.

Colle '083 discloses a method of inhibiting hydrate formation in a petroleum fluid stream (Column 1 Lines 10-27 and Column 2 Lines 2-7) comprising the use of a aqueous polymer composition wherein the polymer may comprise acrylamide—as taught by Schiller—amides or esters of acyldehydroalanine, N-vinyl amide, N-allyl amide, maleimide, vinyl oxazoline, N-isopropyl methacrylamide or N-vinyl caprolactam (Column 2 Lines 24-33, Column 3 Lines 32-44 and Column 9 Lines 4-22).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to replace the acrylamide containing polymer of Schiller with the amide or ester of acyldehydroalanine, N-vinyl amide, N-allyl amide, maleimide, vinyl oxazoline, N-isopropyl methacrylamide or N-vinyl caprolactam comprising polymers of Colle '083.

The rationale to do so would have been the motivation provided by the teaching of Colle

'083 that such are functional equivalents and would therefore predictably inhibit scale or precipitate in petroleum fluid streams.

9. Claims 40-57 stand rejected under 35 USC § 103(a) as being unpatentable over Schiller in view of Colle '233.

Schiller teaches a treating a petroleum oil field fluid to inhibit scale or precipitate with an aqueous composition prepared from an acrylamide containing polymer having a bi- or poly-modal molecular weight distribution wherein at least 60% of the polymer has a molecular weight of about 500 to about 2000 and at least about 10% of the polymer has a molecular weight of about 4000 to about 12000 and wherein the molecular weight distribution curve shows either at least two peaks with minimums between or a single minimum point between about 4000 and about 7500 with two peaks on either side of the minimum point as detailed above.

Schiller does not disclose expressly the use of N-isopropyl methacrylamide polymer.

Colle '233 discloses a method of inhibiting hydrate formation in a petroleum fluid stream comprising the use of a aqueous polymer composition wherein the polymer may comprise acrylamide—as taught by Schiller—or N-isopropyl methacrylamide (Abstract).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to replace the acrylamide containing polymer of Schiller with the N-isopropyl methacrylamide polymer of Colle '233. The rationale to do so would have been the motivation provided by the teaching of Colle '233 that such are functional

equivalents and would therefore predictably inhibit scale or precipitate in petroleum fluid streams.

***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Kugel whose telephone number is (571) 272-1460. The examiner can normally be reached on M-Th 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Timothy J. Kugel/  
Primary Examiner, Art Unit 1796